IN THE CLAIMS

Please replace any previous listing of the claims with the following replacement listing of the claims:

Replacement Listing of the Claims

1. (Previously presented) A decoding power aware encoding method for generating a predictively encoded data stream, in which predictions, that result in a reduction in the amount of data transferred from a secondary memory to a primary memory during a decoding process, are favored, said method for favoring certain predictions comprising:

    (a) a model for transfer of data from said secondary memory to said primary memory in the decoding process;

    (b) a scheme for weighting relative merits of favoring a certain prediction and the associated loss in compression gain, and

    (c) based on said weighting scheme, choosing a particular one of the predictions from candidates allowed by the compression scheme.

2. (Currently amended) A power aware decompression method for decoding a predictively encoded data stream, comprising:

    (a) generating a first selection signal which signals whether ~~the~~ prediction data ~~to be used~~ for a prediction process resides in a primary memory in part or in whole;

(b) if the first selection signal indicates that a portion of the said prediction data or the whole of the said prediction data is not present in said primary memory:

     i. generating a second selection signal, based on an estimate of future needs of the prediction process, to signal that portion of said primary memory where said prediction data, which is not already present in said primary memory, should reside, and

     ii. transferring said prediction data that is not already present in primary memory, from a secondary memory to that portion of said primary memory indicated by the second selection signal~~, and~~

(c) generating a prediction signal ~~to be used in a process of decompression~~ by manipulating <u>said prediction</u> data residing in said primary memory<u>; and</u>

(d) <u>using said prediction signal to provide motion compensation in a decode of said predictively encoded data stream.</u>

3. (Currently amended) A method for decoding a coded data stream comprising:

    (a) processing the coded data stream to produce outputted decoded data frames;

    (b) transmitting signals to and receiving signals from an external memory for storage of previously decoded reference data frames, and

3

(c) transmitting signals to and receiving signals from a primary memory for storage and retrieval of data frames being decoded currently and selected ones of said previously decoded reference data frames; and

(d) searching said primary memory for a best match between a current one of said data frames and said previously decoded data frames, wherein step (a) uses said best match to provide motion compensation.

4. (Currently amended) A system for decoding a coded data stream comprising:

(a) a processor for outputtingthat outputs decoded data frames;

(b) an external memory;

(c) an internal primary memory having a high speed access relative to a lower speed access of the external memory's access speed, and

(d) a memory management scheme for decreasingmanager that decreases an amount of traffic to the external memory so as to provide better real-time performance and power saving by a connection arrangement for transmissions from said processor to said external memory and said internal primary memory, wherein said internal primary memory is dedicated to a motion compensation function of data decoding memories.

5. (Canceled)

6. (Currently amended) A system as defined in claim 4, wherein said processor receives the coded data stream at its input, and has an output respectively connected to said external and internal primary memories and a further output providing decoded data frames.

7. (Currently amended) A system for decoding a coded data stream comprising:

> (a) a processor ~~for outputting~~that outputs decoded data frames;

> (b) motion ~~compensation means~~compensator comprising ~~having~~ a memory ~~for storing~~that stores a reference data frame as well as a data frame being decoded currently;

> (c) an external memory;

> (d) an internal primary memory having a high speed access relative to a lower speed access of the external memory, and

> (e) wherein said internal primary memory is dedicated to a motion compensation function of decoding.

8. (Currently amended) A system for encoding an input bit frame comprising:

> (a) a memory that stores data reference frames;

> ~~(a)~~(b) a motion estimator for receiving said input frame and for searching said data reference frames to find ~~the~~ a best match between said input frame and an area in ~~a~~ one of said data reference frames;

> ~~(b)~~(c) a primary memory model coupled to the motion estimator;

(e)(d) a motion vector selector coupled to the output of the motion estimator;

(d)a memory for storing data reference frames, and

(e) a quality and rate controller coupled to the motion vector selector.

9. (Previously presented) A system for encoding a data frame as defined in claim 8, further comprising a motion vectors module for determining the motion vectors based on a current block and a said best matched candidate.

10. (Currently amended) A computer readable medium encoded with computer executable instructions for controlling the processing of a system that decodes a coded data stream, said set of computer executable instructions comprising the steps of:

(a) controlling a processing of a coded data stream to produce outputted data frames;

(b) controlling a transmittal of signals to, and a reception of signals from, a high speed primary memory for storage and retrieval of data frames being decoded currently and of selected ones of said previously decoded reference data frames;

(c) controlling a transmittal to, and a reception of signals from, an external memory,

(d) searching said primary memory for a best match between a current one of said data frames and said previously decoded data frames, wherein step (a) uses said best match to provide motion compensation; and

(d)(e) controlling an amount of traffic to the external memory.